

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-11 (Canceled)

12. (Previously Presented): An apparatus according to claim 27, further comprising a hydrotreating zone (15) for hydrotreating a second gasoline cut, said hydrotreating zone (15) having a gasoline cut inlet line which is in fluid communication with said second discharge line (4) for introducing said second gasoline cut from said fractionation column (1), a first hydrotreated cut outlet line (16), and a hydrogen supply line (17) connected to said second discharge line (4) or said hydrotreating zone (15), and a stripping column (18) having a hydrotreated cut inlet line in fluid communication with said first hydrotreated cut outlet line, an H₂S outlet line (19), and a second hydrotreated cut outlet line (20).

13. (Canceled)

14. (Canceled)

15. (Currently Amended): An apparatus ~~according to claim 25~~, for production of gasoline with reduced sulphur content from a gasoline, comprising
a fractionation column (1) having a gasoline gas inlet line (2) for introducing gasoline into said fractionation column, a first discharge line (3) for removing a first gasoline cut from an upper portion of said fractionation column, and a second discharge line (4) for removing a second gasoline cut from a lower portion of said fractionation column;

a hydrotreatment zone (5) comprising a catalytic bed, a gasoline cut inlet line (6) for introducing said first gasoline cut, said gasoline cut inlet line (6) being in fluid communication with said first discharge line (3) of said fractionation column (1), said hydrotreatment zone (5) also comprising a hydrotreated effluent outlet line (8);

a stripping zone (9) comprising a hydrotreated gasoline gas inlet in fluid communication with said hydrotreated effluent outlet line (8) of said hydrotreatment zone (5), an H₂S outlet line (10), and a stripped gasoline outlet line (11); ~~and said apparatus also comprising at least one of the following:~~

a sweetening zone (12) comprising a gasoline gas inlet in fluid communication with said stripped gasoline gas outlet line (11) and with an oxidizing agent supply line (14) for introducing oxidizing agent to said sweetening zone and a stripped and sweetened gasoline outlet line connected to said sweetening zone (12); ~~or and~~

~~a treatment zone (7), said treatment zone (7) being in fluid communication with said first discharge line (3) and said hydrotreatment zone (5), said treatment zone (7) having a gas cut inlet connected to said first discharge line (3) of said fractionation column (1), a treated gasoline cut outlet line, and at least one catalyst bed containing 0.1-1% of palladium deposited on a support;~~

~~wherein said apparatus comprises said sweetening zone (12), but does not comprise said treatment zone (7);~~

~~said apparatus further comprising a selective diene hydrogenation zone located between said fractionation column (1) and said hydrotreatment zone (5), said selective diene hydrogenation zone comprising a gasoline inlet line in fluid communication with said first discharge line (3) for introducing a first gasoline cut, and a deoxygenated first gasoline cut outlet line in fluid communication with said gasoline cut inlet line (6);~~

wherein said apparatus does not comprise a treatment zone (7) in fluid communication with said first discharge line (3) and said hydrotreatment zone (5).

16. (Currently Amended): An apparatus for production of gasoline with reduced sulphur content from a gasoline, comprising

a fractionation column (1) having a gasoline gas inlet line (2) for introducing gasoline into said fractionation column, a first discharge line (3) for removing a first gasoline cut from an upper portion of said fractionation column, and a second discharge line (4) for removing a second gasoline cut from a lower portion of said fractionation column;

a hydrotreatment zone (5) comprising a catalytic bed, a gasoline cut inlet line (6) for

introducing said first gasoline cut, said gasoline cut inlet line (6) being in fluid communication with said first discharge line (3) of said fractionation column (1), said hydrotreatment zone (5) also comprising a hydrotreated effluent outlet line (8);

a stripping zone (9) comprising a hydrotreated gasoline gas inlet in fluid communication with said hydrotreated effluent outlet line (8) of said hydrotreatment zone (5), an H₂S outlet line (10), and a stripped gasoline outlet line (11); and ~~said apparatus also comprising at least one of the following:~~

a sweetening zone (12) comprising a gasoline gas inlet in fluid communication with said stripped gasoline gas outlet line (11) and with an oxidizing agent supply line (14) for introducing oxidizing agent to said sweetening zone and a stripped and sweetened gasoline outlet line connected to said sweetening zone (12); or

~~a treatment zone (7), said treatment zone (7) being in fluid communication with said first discharge line (3) and said hydrotreatment zone (5), said treatment zone (7) having a gas cut inlet connected to said first discharge line (3) of said fractionation column (1), a treated gasoline cut outlet line, and at least one catalyst bed containing 0.1-1% of palladium deposited on a support;~~

~~wherein said apparatus does not have a treatment zone (7) in fluid communication with said first discharge line (3) and said hydrotreatment zone (5), and said apparatus further comprises a selective diene hydrogenation zone located between said fractionation column (1) and said hydrotreatment zone (5), said selective diene hydrogenation zone comprising a gasoline inlet line in fluid communication with said first discharge line (3) for introducing a first gasoline cut, and a dedienized first gasoline cut outlet line in fluid communication with said gasoline cut inlet line (6); and~~

~~said apparatus further comprising a hydrotreating zone (15) for hydrotreating a second gasoline cut, said hydrotreating zone (15) having a gasoline cut inlet line which is in fluid communication with said second discharge line (4) for introducing said second gasoline cut from said fractionation column (1), a first hydrotreated cut outlet line (16), and a hydrogen supply line (17) connected to said second discharge line (4) or said hydrotreating zone (15), and a stripping column (18) having a hydrotreated cut inlet line in fluid communication with said first hydrotreated cut outlet line, an H₂S outlet line (19), and a second hydrotreated cut outlet line (20);~~

wherein said apparatus does not have a treatment zone (7) in fluid communication with said first discharge line (3) and said hydrotreatment zone (5).

17. (Cancelled)

18. (Cancelled):

19. (Previously Presented): An apparatus according to claim 27, wherein said catalytic bed in said hydrotreatment zone (5) contains a catalyst having at least one group VIII metal, at least one group VI metal, or a combination thereof.

20. (Previously Presented): An apparatus according to claim 16, wherein said selective diene hydrogenation zone contains a catalyst comprising at least one group VIII metal and a support.

21. (Previously Presented): An apparatus according to claim 20, wherein said catalyst of said selective diene hydrogenation zone comprises 0.1-1% of palladium deposited on said support.

22. (Currently Amended): An apparatus according to claim 21, wherein said catalyst of said selective selected diene hydrogenation zone further contains 1-20% by weight nickel or contains gold in an amount whereby the Au/Pd weight ratio is 0.1-1.

23. (Previously Presented): An apparatus according to claim 16, wherein said selective diene hydrogenation zone contains a first catalyst zone and a second catalyst zone, wherein said first catalyst zone is in fluid communication with the gasoline inlet line, and said second catalyst zone is in fluid communication with said first catalyst zone and in fluid communication with said dedienized first gasoline cut outlet line.

24. (Currently Amended): An apparatus according to claim 23, wherein said first catalyst zone is at most 75 volume % of the total volume of said first catalyst zone and

of said second catalyst zone.

25. (Cancelled):

26. (Cancelled):

27. (Currently Amended) An apparatus for production of gasoline with reduced sulphur content from a gasoline, comprising

a fractionation column (1) having a gasoline gas inlet line (2) for introducing gasoline into said fractionation column, a first discharge line (3) for removing a first gasoline cut from an upper portion of said fractionation column, and a second discharge line (4) for removing a second gasoline cut from a lower portion of said fractionation column;

a hydrotreatment zone (5) comprising a catalytic bed, a gasoline cut inlet line (6) for introducing said first gasoline cut, said gasoline cut inlet line (6) being in fluid communication with said first discharge line (3) of said fractionation column (1), said hydrotreatment zone (5) also comprising a hydrotreated effluent outlet line (8);

a stripping zone (9) comprising a hydrotreated gasoline gas inlet in fluid communication with said hydrotreated effluent outlet line (8) of said hydrotreatment zone (5), an H₂S outlet line (10), and a stripped gasoline outlet line (11); and ~~said apparatus also comprising at least one of the following:~~

a sweetening zone (12) comprising a gasoline gas inlet in fluid communication with said stripped gasoline gas outlet line (11) and with an oxidizing agent supply line (14) for introducing oxidizing agent to said sweetening zone and a stripped and sweetened gasoline outlet line connected to said sweetening zone (12); or and

a treatment zone (7), said treatment zone (7) being in fluid communication with said first discharge line (3) and said hydrotreatment zone (5), said treatment zone (7) having a gasoline gas cut inlet connected to said first discharge line (3) of said fractionation column (1), a treated gasoline cut outlet line, and at least one catalyst bed containing 0.1-1% of palladium deposited on a support;

~~wherein said apparatus comprises both said sweetening zone (12) and said treatment~~

zone (7).

28. (Previously Presented) An apparatus according to claim 15, wherein the first discharge line (3) is directly connected to the hydrotreatment zone (5).

29. (Cancelled):

30. (Previously Presented) An apparatus according to claim 16, wherein the gasoline cut inlet line (6) is adapted to receive the entire amount of the first gasoline cut from the upper portion of the fractionation column.

31. (New): An apparatus according to claim 15, wherein said selective diene hydrogenation zone contains a catalyst comprising at least one group VIII metal and a support.

32. (New): An apparatus according to claim 31, wherein said catalyst of said selective diene hydrogenation zone comprises 0.1-1% of palladium deposited on said support.

33. (New): An apparatus according to claim 32, wherein said catalyst of said selective diene hydrogenation zone comprises 0.2-0.5% of palladium deposited on said support and said support is alumina, silica, or silica-alumina.

34. (New): An apparatus according to claim 21, wherein said catalyst of said selective diene hydrogenation zone comprises 0.2-0.5% of palladium deposited on said support and said support is alumina, silica, or silica-alumina.

35. (New): An apparatus according to claim 32, wherein said catalyst of said selective diene hydrogenation zone further contains 1-20% by weight nickel or contains gold in an amount whereby the Au/Pd weight ratio is 0.1-1.

36. (New): An apparatus according to claim 15, wherein said selective diene hydrogenation zone contains a first catalyst zone and a second catalyst zone, wherein said first catalyst zone is in fluid communication with the gasoline inlet line, and said second catalyst zone is in fluid communication with said first catalyst zone and in fluid communication with said dedienized first gasoline cut outlet line.

37. (New): An apparatus according to claim 36, wherein said first catalyst zone is at most 75 volume % of the total volume of said first catalyst zone and said second catalyst zone.

38. (New) An apparatus according to claim 16, wherein the first discharge line (3) is directly connected to the hydrotreatment zone (5).

39. (New): An apparatus according to claim 15, wherein said catalytic bed in said hydrotreatment zone (5) contains a catalyst having at least one group VIII metal, at least one group VI metal, or a combination thereof.

40. (New): An apparatus according to claim 16, wherein said catalytic bed in said hydrotreatment zone (5) contains a catalyst having at least one group VIII metal, at least one group VI metal, or a combination thereof.

41. (New): An apparatus according to claim 27, further comprising a hydrotreating zone (15) for hydrotreating a second gasoline cut, said hydrotreating zone (15) having a gasoline cut inlet line which is in fluid communication with said second discharge line (4) for introducing said second gasoline cut from said fractionation column (1) directly into said hydrotreating zone (15), a first hydrotreated cut outlet line (16), and a hydrogen supply line (17) connected to said second discharge line (4) or said hydrotreating zone (15), and a stripping column (18) having a hydrotreated cut inlet line in direct fluid communication with said first hydrotreated cut outlet line, an H₂S outlet line (19), and a second hydrotreated cut outlet line (20).